WHAT IS CLAIMED IS:

1. A pressure transmitter for a clean environment, the pressure transmitter comprising:

a process coupling coupleable to a source of process fluid;

a pressure sensor module coupled to the process coupling for fluidic communication with the process fluid, the pressure sensor module having an electrical characteristic that varies with process fluid pressure;

measurement circuitry operably coupled to the pressure sensor module, the measurement circuitry being adapted to provide a signal based upon at least one measurement of the electrical characteristic;

communication circuitry coupled to the measurement circuitry and adapted to provide pressure-related information to a process control loop; and

wherein the pressure transmitter further comprises a weld ring welded to the process coupling and disposed about the pressure sensor module to provide a secondary seal for the process fluid, the weld ring extending outwardly from an outer diameter of the weld ring.

2. The transmitter of claim 1, wherein the weld ring is adapted to couple to a housing.

3. The transmitter of claim 1, wherein the weld ring is constructed type 316L ferrite #3-10 stainless steel.

4. A pressure transmitter for a clean environment, the pressure transmitter comprising:

a process coupling coupleable to a source of process fluid;

a pressure sensor module coupled to the process coupling for fluidic communication with the process fluid, the pressure sensor module having an electrical characteristic that varies with process fluid pressure;

measurement circuitry operably coupled to the pressure sensor module, the measurement circuitry being adapted to provide a signal based upon at least one measurement of the electrical characteristic;

communication circuitry coupled to the measurement circuitry and adapted to provide pressure-related information to a process control loop; and

wherein the pressure sensor module further includes:

an isolator diaphragm positioned to contact the process fluid;

a deflectable sensor diaphragm pressure sensor disposed within the pressure sensor module; and

filler material disposed between the isolator diaphragm and the sensor diaphragm, wherein the filler material is constructed from an elastomer.

5. The transmitter of claim 4, wherein the elastomer is polyurethane.

6. The transmitter of claim 5, wherein the polyurethane filler material is polyether aromatic polyurethane.

7. The transmitter of claim 5, wherein the filler material is ST-1890-91 polyurethane.

8. The transmitter of claim 5, wherein the filler material is ST-1880-87 polyurethane.

9. The transmitter of claim 4, wherein the filler is bonded to both the isolator diaphragm and the sensor diaphragm.

10. A pressure sensor module for a pressure transmitter, the pressure sensor module comprising:

a header assembly;

a deflectable sensor diaphragm mounted relative to the header assembly, the deflectable sensor diaphragm having at least one element disposed on the diaphragm having an electrical characteristic that varies with diaphragm deflection;

an isolator diaphragm coupled to the header assembly and adapted for contact with process fluid, the isolator diaphragm operable coupled to the deflectable sensor diaphragm; and

an elastomeric filler material interposed between the isolator diaphragm and the deflectable sensor diaphragm.

11. The transmitter of claim 10, wherein the elastomer is polyurethane.

12. The transmitter of claim 10, wherein the polyurethane filler material is polyether aromatic polyurethane.

13. The transmitter of claim 12, wherein the filler material is ST-1890-91 polyurethane.

14. The transmitter of claim 12, wherein the filler material is ST-1880-87 polyurethane.

15. The transmitter of claim 10, wherein the filler is bonded to both the isolator diaphragm and the sensor diaphragm.

16. A pressure transmitter for a clean environment, the transmitter comprising:

a process coupleable to a source of process fluid;

means for sensing process fluid pressure, the means for sensing coupled to the process coupling;

measurement circuitry coupled to the pressure sensing means, the measurement circuitry being adapted to provide a signal based upon at least one measurement of an electrical characteristic of the pressure sensing means; and

a communication circuit coupled to the measurement circuitry and adapted to provide pressure-related information over a process control loop.